

gens or is an artifact of the diagnostic testing methods used is uncertain.

The findings in this report are subject to at least three limitations. First, a definitive diagnosis of GAS pneumonia is difficult. Blood cultures frequently are negative in GAS pneumonia²; therefore, a confirmed diagnosis might not be possible unless pleural fluid is obtained. Second, because positive throat or sputum cultures can represent simple GAS pharyngitis or asymptomatic carriage of the organism, the specificity of these cultures for diagnosis of GAS pneumonia is low. Rising ASO titers might distinguish between GAS carriage and infection but are not specific for invasive GAS disease.⁷ Finally, diagnosing *M. pneumoniae* and *C. pneumoniae* infections by serology alone can be problematic, especially in the context of known GAS infections. Several serologic assays for *M. pneumoniae* are available commercially but vary in sensitivity and specificity.⁸ Although the microimmunofluorescence assay is considered the method of choice for serologic diagnosis of *C. pneumoniae* infection, interpretation of the results can be subjective. False positives can occur for *M. pneumoniae* and possibly for *C. pneumoniae* serologic assays in the presence of a nonspecific antibody response to GAS infection.

Primary and secondary penicillin chemoprophylaxis for GAS infections is effective in military recruit populations and has been used intermittently since 1951.^{3,4} Primary (i.e., tandem) prophylaxis is administered to all recruits shortly after their arrival at a training facility to prevent the introduction of GAS into this population, and secondary (i.e., mass) prophylaxis is provided concurrently to all recruits in a given facility to interrupt established disease transmission. Oral erythromycin or azithromycin prophylaxis is used to prevent infection among recruits who are allergic to penicillin. The reason that primary prophylaxis failed in this circumstance is unclear. Possible explanations include failure to achieve adequate serum levels of peni-

cillin,⁹ waning protection as serum levels declined before the second scheduled dose of penicillin was administered on training day 28, and lack of compliance with oral erythromycin among penicillin-allergic recruits. Eradicating GAS carriage is difficult even with appropriate doses of penicillin and in the absence of penicillin resistance.¹⁰

Early diagnosis and management of GAS infections might prevent the development of suppurative complications. Routine surveillance for noninvasive GAS disease was initiated recently at MCRD to identify breakthrough GAS infections and prevent outbreaks of GAS disease. Institution of routine surveillance for noninvasive GAS disease also might be useful for other military training facilities.

Acknowledgments

This report is based on assistance provided by W MacAllister, J Christensen, Naval Medical Center San Diego, California, and by R Besser, MD, R Facklam, PhD, B Fields, PhD, D Talkington, PhD, WL Thacker, MS, and ML Tondella, PhD, Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC.

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10 available

Deaths Among Drivers of Off-Road Vehicles After Collisions With Trail Gates—New Hampshire, 1997-2002

MMWR. 2003;52:45-46

2 figures omitted

DURING APRIL-JULY 2002, THREE DEATHS occurred on New Hampshire trails when adolescents driving off-highway recreational vehicles (OHRVs) collided with trail gates. Because of these three incidents, the New Hampshire Department of Health and Human Services conducted a study to determine the extent of the problem and characteristics of the

fatal events. This report describes trail gate fatalities in New Hampshire during 1997-2002. To prevent trail gate collisions, efforts should focus on increased enforcement of OHRV operating rules, driver education, enhanced gate visibility, and improved signage.

A case was defined as the death of a person on an OHRV who collided with a trail gate in New Hampshire during 1997-2002. Cases were identified by reviewing New Hampshire Fish and Game Department (NHFGD) reports and by searching newspaper accounts by keywords.

Case Reports

Case 1. On July 14, 2002, a boy aged 12 years was riding a registered motorbike on the Rockingham Trail (Rockingham County), when he struck a trail gate at 2:25 p.m. The boy was familiar with the trail, had been riding for several hours, was wearing protective equipment (helmet, chest protector, and riding boots), and was accompanied by adults, but he had not taken a safety course. He looked back just before hitting the gate. His death was immediate and caused by a cervical spine injury.

Case 2. On April 13, 2002, a boy aged 17 years with a valid New Hampshire driver's license was riding an unregistered all-terrain vehicle (ATV) on a closed section of a trail in Keene during a rain storm when he struck a trail gate at 10:23 p.m. The driver's blood alcohol concentration (BAC) was 0.22 mg/dL (state BAC limit for OHRV operators: <0.08 mg/dL). The driver was familiar with the trail, had been riding with friends for approximately 1.5 hours when his ATV headlight stopped working, and was reportedly accelerating when the ATV struck the trail gate. He died from massive chest injuries. Neither the driver nor his passenger was wearing a helmet; the passenger was treated for head and neck injuries and recovered.

Case 3. On April 5, 2002, a boy aged 16 years was riding a motorbike without a working headlight on a closed section of the Rockingham Trail when he

struck a trail gate at 6:48 p.m. (30 minutes after sunset). The driver had turned onto the trail to evade police, who had noticed his unregistered motorbike. A witness reported that the driver was going approximately 40-50 mph when he hit the gate. Within minutes, the driver died from blunt abdominal injuries. A passenger on the motorbike was not injured seriously. The driver was wearing a helmet; it is unknown whether he had a valid driver's license.

Case 4. On January 26, 2000, a girl aged 16 years was riding a registered snowmobile on a trail in Mason when she struck a trail gate at 7:02 p.m. She was riding with her father off their property for the first time. The lights on her snowmobile were working and she was wearing a helmet, but she had not taken a safety course and did not have a driver's license. She went around two or three trail gates before the fatal collision. Evidence of braking was observed approximately 20 feet in front of the gate. The driver was ejected from the snowmobile and pronounced dead at the hospital; her death was caused by a cervical spine injury.

Case 5. On November 18, 1997, a man aged 31 years with a valid New Hampshire driver's license was driving a snowmobile with an expired registration on the Rockingham Trail when he struck a trail gate at 10:11 p.m. The driver's BAC was 0.12 mg/dL. He was driving without a working headlight, reportedly was driving fast, and was not wearing a helmet. When the driver saw the gate, he told his passenger to duck. The driver died immediately of massive chest injuries, and the passenger sustained minor injuries.

Reported by: T Acerno, New Hampshire Fish and Game Dept; T Andrew, MD, Office of the Chief Medical Examiner; N Twitchell, A Pelletier, MD, New Hampshire Dept of Health and Human Svcs. L Ramsey, PhD, EIS Officer, CDC.

CDC Editorial Note: The New Hampshire Bureau of Trails (NHBT) manages approximately 300 miles of rail trails. Rail trails are old railroad tracks that have been converted to trails for OHRV (primarily snowmobile) use. The rails and ties have been removed from

the trails. The surface is gravel and dirt, and the trails are usually straight for long distances. Trail gates allow access of emergency vehicles and equipment to maintain the trail while excluding conventional motor vehicles. The recommended height of the gates is 3 feet, and the recommended length is ≥ 10 feet. The gates are painted Occupational Safety and Health Administration or Omaha orange and have reflectors placed every 3 feet on the cross bar and diagonally on the gate uprights. The New Hampshire Department of Resources and Economic Development guidelines recommend that reflective signs be placed at a reasonable and safe distance ahead of the gates.

In New Hampshire, all OHRVs must be registered with NHFGD. In 2002, approximately 82,000 OHRVs were registered; of these, approximately two thirds were snowmobiles. NHFGD conducts safety training courses for OHRV operators. State law requires that OHRV operators driving off their private property either possess a valid driver's license or have taken the safety training course. Anyone aged < 18 years who has not taken the safety course must be accompanied by a licensed adult and must wear eye protection and a helmet. NHBT rules prohibit ATVs or trail bikes on the trails between 30 minutes after sunset and 30 minutes before sunrise, but in the winter, OHRVs can operate at night if they have a working headlight and tail-light. In addition, it is illegal for a driver with BAC ≥ 0.08 mg/dL to operate an OHRV. On rail trails, the speed limit is 45 mph for snowmobiles and 35 mph for motorbikes and ATVs.

During July 1, 2001–June 30, 2002, nine fatalities occurred on OHRVs in New Hampshire, two of which involved trail gates (NHFGD, unpublished data, 2002). In the case series described in this report, fatalities involving trail gates occurred most frequently among males who were young or intoxicated. A high proportion of the collisions at night occurred on OHRVs that did not have operating headlights. Three of the five deaths occurred on the Rockingham Trail, and two fatalities oc-

curred on sections of trails that were closed to the type of vehicle involved in the incident.

The findings in this report are subject to at least four limitations. First, data were unavailable for some variables (e.g., speed and length of time on trail). Second, cases represent only fatalities and do not include trail gate injuries and hazards. Third, because of the lack of denominators, assessment of risk was not possible. Finally, case finding might have been incomplete, resulting in underreporting of fatalities.

As a result of increased public concern about these fatalities, NHBT has worked to increase the visibility of trail gates. The gates now have a polyvinyl chloride (PVC) pipe, 4 inches in diameter and 10 feet long around the metal bar. The color of the PVC pipe alternates every 12 inches between black, orange, and green. The alternating colors help show definition, which is important for color-blind persons. Warning signs (e.g., "Caution Gate Ahead") are being posted 250 feet in front of each gate on cedar posts with orange and green markings. In addition, flexible posts, which collapse when hit but should not injure OHRV operators, are being placed 100 feet in front of trail gates on certain sections of the Rockingham trail where trail design differs from the usual design.

Measures to improve vehicle safety include safety inspections, headlights that turn on automatically when the OHRV engine is started, and speed governors (i.e., devices to limit maximum speed). Measures to improve driver safety include reducing speed limits on rail trails, strengthening enforcement of OHRV operating rules, requiring that all OHRV drivers take a safety course, and imposing age restrictions for OHRV use.¹ NHBT has reduced the speed limit for all OHRVs to 25 mph on trails that allow summer ATV and motorbike use and 10 mph within 250 feet of stop signs and trail gates.

Acknowledgments

This report is based on contributions by P Gray, C Gamache, New Hampshire Dept of Resources and

Economic Development. R Shults, PhD, Div of Unintentional Injury Prevention, National Center for Injury Prevention and Control; J Magri, MD, Epidemiology Program Office, CDC.

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Public Health Dispatch: Outbreaks of Community-Associated Methicillin-Resistant *Staphylococcus aureus* Skin Infections—Los Angeles County, California, 2002-2003

MMWR. 2003;52:88

DURING 2002, THE LOS ANGELES County Department of Health Services (LACDHS) investigated three community outbreaks of skin infections associated with methicillin-resistant *Staphylococcus aureus* (MRSA). MRSA commonly has occurred in health-care settings; however, recent investigations of community-associated MRSA (CA-MRSA) have identified infection in various settings, including correctional facilities, athletic teams, and others (CDC, unpublished data, 2002). This report describes investigations of CA-MRSA in Los Angeles County.

In September 2002, LACDHS investigated cases of MRSA infection in two athletes on the same team who were hospitalized with MRSA within the same week. No additional cases of MRSA have been identified. The source

of MRSA infection for these patients has not been determined.

On November 22, 2002, physicians from two large infectious disease clinical practices notified LACDHS of MRSA skin infections among men who have sex with men (MSM). LACDHS has increased surveillance in selected clinics serving MSM and has begun a study of risk factors for infection among this population.

Currently, LACDHS is investigating an outbreak in the Los Angeles County Jail, in which 928 inmates had MRSA wound infections diagnosed in 2002. Patients were reported as having spider bites but subsequently were found to be infected with MRSA. Review of medical charts of 39 of the 66 inmates hospitalized with these infections indicated that all initially had skin infections, but 10 later had invasive disease, including bacteremia, endocarditis, or osteomyelitis. The Los Angeles County Jail is the largest jail system in the United States; 165,000 persons are incarcerated in the jail each year. LACDHS issued recommendations for the diagnosis and treatment of skin infections in the jail and is working with the Los Angeles County Sheriff's Department to review policies and procedures on laundry, showers, environmental cleaning, skin care, and control of person-to-person transmission.

In each of these outbreaks, antimicrobial susceptibility patterns from MRSA isolates of these patients have been similar, including resistance to fluoroquinolones. Molecular analysis by pulsed-field gel electrophoresis (PFGE) of isolates performed at the Los Angeles County Public Health Laboratory has identified a predominant strain common to all of these outbreaks. The PFGE pattern of the predominant strain also is consistent with PFGE patterns that CDC has identified in community outbreaks from other parts of the United States (CDC, unpublished data, 2003). Selected MRSA isolates will be sent to CDC to characterize their virulence factors and toxins.

LACDHS is advising health-care providers to be aware that MRSA is a documented cause of community-associated skin and soft tissue infections. Local treatment and incision and drainage remain first-line therapies for soft tissue infections. Clinicians who suspect MRSA skin and soft tissue infections should consider microbiologic culture of wounds and appropriate antimicrobial therapy.

Skin infections might be prevented by keeping cuts and abrasions clean by washing with soap and water. Previous investigations of MRSA infection clusters in community settings have identified MRSA transmission through sharing common objects (e.g., athletic equipment, towels, benches, and personal items) contaminated with MRSA (CDC, unpublished data, 2002). To prevent MRSA infections from spreading in health-care settings, health-care providers should use standard precautions and appropriate hand hygiene between treating patients, clean surfaces of examination rooms with commercial disinfectant or diluted bleach (1 tablespoon bleach in 1 quart water), and carefully dispose of dressings and other materials that come into contact with pus, nasal discharge, blood, and urine.¹

The outbreaks described in this report reflect the importance of CA-MRSA infections. In collaboration with state health departments, CDC is conducting active, population-based surveillance for CA-MRSA in selected regions of the United States to help characterize the incidence and risk factors for MRSA in the community.

Reported by: Participating physicians and microbiologists; Los Angeles County Jail; Los Angeles County Dept of Health Svcs, Los Angeles County, California. Div of Healthcare Quality Promotion, National Center for Infectious Diseases, CDC.

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